What is claimed is:

1. A separator for a polymer electrolyte membrane fuel cell comprising a resin substrate and an electroconductive coating formed thereon.

2. The separator according to claim 1, wherein the resin substrate is made of a thermoplastic or thermosetting resin.

3. The separator according to claim 2, wherein the thermoplastic resin is selected from the group consisting of a polycarbonate, ABS, polyacetal, polyamide, polysulfide and polyimide.

4. The separator according to claim 2, wherein the thermosetting resin is selected from the group consisting of a phenol resin, epoxy resin, melamine resin, urea resin, unsaturated polyester, alkid resin, silicon resin, polyurethane and polyimide.

5. The separator according to claim 1, wherein the resin substrate is a composite resin containing a filler selected from the group consisting of glass fiber, carbon fiber, boron fiber, metal fiber, pulp, paper, asbestos, carbon black, silica, clay, zeolite, polytetrafluoroethylene fiber and a mixture thereof.

6. The separator according to claim 1, wherein the electroconductive coating is derived from an electroconductive resin composition comprising a binder resin, an electroconductive carbon or metal powder and one or more organic solvents.

7. The separator according to claim 6, wherein the binder resin is an epoxy, silicon, polyimide, phenol or acryl resin.

8. The separator according to claim 6, wherein the electroconductive powder is

dispersed in the resin composition in an amount of 5 to 95% by weight.

9. A polymer electrolyte membrane fuel cell having an electrode containing the separator of claim 1.

10. The fuel cell according to claim 9, wherein the fuel cell is a direct methanol fuel cell.